

AMENDMENT UNDER 37 C.F.R. § 1.116  
Appln. No. 09/673,143  
Docket no. Q60989

**REMARKS**

Claims 1-4, 8-10, 16, and 17 are all the claims pending in the application. Claims 1, 8 and 10 are independent claims.

**Claims Rejections Under 35 U.S.C. § 103**

Claims 1-17 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *previously cited* Hendewerk et al. (US 6,270,856 B1) in view of *previously cited* Maxfield et al. (WO 93/04117).

Dependent claims 5-7 and 11-15 have been canceled, rendering the rejection of these claims moot.

Applicants have amended independent claim 1 to recite that the organic compound is chosen from polyethylene, polypropylene, copolymer of ethylene and propylene, or mixture thereof. Applicants have also rewritten claims 8 and 10 in independent form and have amended these claims in a similar manner. These amendments are fully supported by the original specification at least by the non-limiting discussion at the paragraph bridging pages 3 and 4.

***Claim 1***

Applicants respectfully request the Examiner to withdraw the rejection of independent claim 1 at least because the combination of Hendewerk and Maxfield does not teach or suggest all of the claim recitations. For example, the combination of Hendewerk and Maxfield does not teach or suggest the claimed medium-voltage to high voltage direct current power cable including a conductive material core and at least one covering layer, the at least one covering layer constituted essentially of a material comprising an inorganic compound made from a

AMENDMENT UNDER 37 C.F.R. § 1.116  
Appln. No. 09/673,143  
Docket no. Q60989

*nanocomposite material and an organic compound chosen from polyethylene, polypropylene, copolymer of ethylene and propylene, or mixture thereof.*

As an initial matter, Applicants respectfully submit that it is not obvious to use a nanocomposite composition as layers of a medium-voltage to high voltage direct current power cable.

Maxfield discloses that the described composition improves tensile yield strength, tensile modulus and ultimate elongation, mechanical reinforcement and imparts lower permeability to polymers. Maxfield also discloses, as an example of a molded article, “components for the electrical and electronics industries.” This example is in series of a plurality of very general examples, which go from sports equipment to bottles. *See* Maxfield at 35:30-36.

The Examiner points out that a medium-voltage to high voltage direct current power cable is a electrical component. Although this is true, any motivation to use Maxfield’s composition in the specific application of Hendewerk’s cable is not based on the disclosure in Maxfield, but instead appears to be based on hindsight. It is clear that Maxfield does not suggest the use of the described composition in layers of medium-voltage to high voltage direct current power cable. Instead, the various applications mentioned at page 35 of Maxfield appear to be general ideas that emerged from a brainstorming session, without any technical support for the specific applications.

In contrast, the specification of present application presents specific reasons why it is advantageous to use a nanocomposite composition as layers of a DC cable. For example, page 6, lines 30 to 37 of the present specification states:

AMENDMENT UNDER 37 C.F.R. § 1.116  
Appln. No. 09/673,143  
Docket no. Q60989

The mechanism of forming the nanocomposite material and extruding it encourages an orientation of the organic compound which limits migration of space charges.

Introducing a nanocomposite material into the insulative material layer 4 of the medium-voltage or high voltage DC cable therefore improves the resistance of the cable to breakdown in the event of a change of polarity.

This technical effect is specific to medium-voltage to high voltage direct current power cable.

In addition, Applicants respectfully submit that it is not obvious to use a medium-voltage to high voltage direct current power cable with a covering layer having a *nanocomposite composition* and an organic compound *being chosen from polyethylene, polypropylene, copolymer of ethylene and propylene, or mixture thereof*.

In order to facilitate the handling and laying the Direct Current cable, it is preferable that the insulating or semiconductive layers are soft or flexible so that they are able to support bending stresses. In contrast, in Maxfield, there are many examples of “the second essential ingredient” listed in pages 25 to 28. This list of components is the result of copying any existing examples without any technical basis for doing so. For example, in this very long list, specific soft or hard components are listed without any order.

In short, the Examiner has proposed a combination of the applied references that is based on a *very narrow* technical choice from a *very large* field of uses and a *very large* field of components. However, the proposed combination of the applied references is not based on any technical reason, or motivation, to achieve the proposed combination.

AMENDMENT UNDER 37 C.F.R. § 1.116  
Appln. No. 09/673,143  
Docket no. Q60989

Therefore, Applicant respectfully requests the Examiner to withdraw the rejection of independent claim 1.

***Claim 8***

In addition, Applicants respectfully request the Examiner to withdraw the rejection of amended claim 8 at least because the combination of Hendewerk and Maxfield does not teach or suggest the claimed medium-voltage to high voltage direct current power cable including a conductive material core and at least one covering layer, the at least one covering layer including an insulative layer constituted essentially of a material comprising an inorganic compound made from a *nanoncomposite material* and an organic compound *chosen from polyethylene, polypropylene, copolymer of ethylene and propylene, or mixture thereof*. The reasons discussed above with respect to claim 1 regarding a layer constituted essentially of a material comprising an inorganic compound made from a *nanoncomposite material* and an organic compound *chosen from polyethylene, polypropylene, copolymer of ethylene and propylene, or mixture thereof* are equally applicable to independent claim 8.

***Claim 10***

Applicants also respectfully request the Examiner to withdraw the rejection of amended claim 10 at least because the combination of Hendewerk and Maxfield does not teach or suggest the claimed medium-voltage to high voltage direct current power cable including a conductive material core and at least one covering layer, the at least one covering layer including a semiconductor screen constituted essentially of a material comprising an inorganic compound made from a *nanoncomposite material* and an organic compound *chosen from polyethylene,*

AMENDMENT UNDER 37 C.F.R. § 1.116  
Appln. No. 09/673,143  
Docket no. Q60989

*polypropylene, copolymer of ethylene and propylene, or mixture thereof.* The reasons discussed above with respect to claim 1 regarding a layer constituted essentially of a material comprising an inorganic compound made from a *nanocomposite material* and an organic compound *chosen from polyethylene, polypropylene, copolymer of ethylene and propylene, or mixture thereof* are equally applicable to independent claim 10.

***Claims 2-4, 9, 16, and 17***

Finally, Applicants respectfully request the Examiner to withdraw the rejections of dependent claims 2-4, 9, 16, and 17 at least because of their dependency from claim 1.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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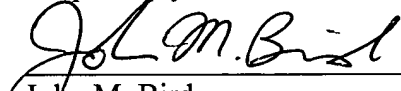
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**23373**

CUSTOMER NUMBER

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Respectfully submitted,

  
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